

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-8 - Cancelled.

9. (Withdrawn) An engineered tissue comprising the electroprocessed collagen matrix of Claim 2 and cells.

10. (Withdrawn) The engineered tissue of Claim 9, wherein the cells are stem cells, committed stem cells, or differentiated cells.

11. (Withdrawn) The engineered tissue of Claim 9, wherein the cells comprise fibroblast cells, the electroprocessed collagen comprises Type I collagen, and the electroprocessed collagen matrix further comprises electroprocessed elastin.

12. (Withdrawn) The engineered tissue of Claim 9, wherein the cells comprise chondrocyte cells, and the electroprocessed collagen comprises Type II collagen.

13. (Withdrawn) A construct comprising the electroprocessed collagen matrix of Claim 2.

14. (Withdrawn) The construct of Claim 13, wherein the construct is a prosthesis and the electroprocessed collagen matrix forms a coating on one or more surfaces of the prosthesis.

15. (Withdrawn) The construct of Claim 13, wherein the construct is stent, a prosthetic blood vessel, a prosthetic heart, a prosthetic heart valve, a prosthetic heart valve leaflet, an outer sleeve reinforcement for a blood vessel, a prosthetic ligament, a prosthetic muscle,

prosthetic cartilage, prosthetic bone, prosthetic skin, a dural patch, a prosthetic tendon, a nerve guide, a dental prosthesis, a prosthetic liver, a prosthetic pancreas, a cosmetic augmentation, an orthopedic screw, a component of any of the foregoing constructs, or a combination of any of the foregoing constructs.

16. (Withdrawn) The construct of Claim 13 wherein the construct has a substantially cylindrical shape and wherein the construct comprises:

- an outer wall comprising the electroprocessed collagen matrix, wherein the electroprocessed collagen matrix comprises Type I collagen and elastin;

- an inner wall comprising a second electroprocessed matrix, wherein the second electroprocessed collagen matrix comprises Type I collagen and elastin;

- fibroblast cells seeded upon an exterior surface of the outer wall;

- smooth muscle cells seeded upon an interior surface of the outer wall and an exterior surface of the inner wall;

- endothelial cells seeded upon an interior surface of the inner wall; and

- a lumen within the interior surface of the inner wall.

17. (Withdrawn) The construct of Claim 13, wherein the construct has a substantially cylindrical shape and a lumen, the electroprocessed collagen matrix comprises Type I collagen, poly(lactic acid), and poly(glycolic acid), and myoblast cells are contained within the lumen of the construct.

18. (Withdrawn) A method of delivering a substance to a desired location comprising;  
combining the substance with the electroprocessed collagen of Claim 1; and,  
placing the electroprocessed collagen containing the substance in the desired location.

19. (Withdrawn) A method of delivering a substance to a desired location comprising;  
adding a substance to the electroprocessed collagen matrix of Claim 2; and,

placing the electroprocessed collagen matrix containing the substance in the desired location.

20. (Withdrawn) A method of manufacturing the electroprocessed collagen of Claim 1, comprising:

electrodepositing one or more electrically-charged solutions comprising collagen or molecules capable of forming collagen onto a grounded target substrate under conditions effective to electrodeposit collagen or molecules capable of forming collagen on the substrate to form the electroprocessed collagen.

21. (Withdrawn) A method of manufacturing the electroprocessed collagen matrix of Claim 2, comprising:

electrodepositing one or more electrically-charged solutions comprising collagen or molecules capable of forming collagen onto a grounded target substrate under conditions effective to electrodeposit collagen or molecules capable of forming collagen on the substrate to form the electroprocessed collagen matrix.

22. (Withdrawn) A method of manufacturing the engineered tissue of Claim 9, comprising:

electrodepositing one or more electrically-charged solutions comprising collagen or molecules capable of forming collagen, and cells, onto a grounded target substrate under conditions effective to deposit the electroprocessed collagen or molecules capable of forming collagen and the cells onto the substrate.

23. (Withdrawn) A method of manufacturing the engineered tissue of Claim 9, comprising:

electrodepositing one or more electrically-charged solutions comprising collagen or molecules capable of forming collagen onto a grounded target substrate under conditions

effective to deposit the electroprocessed collagen or molecules capable of forming collagen;  
and,

applying cells onto the substrate or into a stream of the electroprocessed collagen or molecules capable of forming collagen, wherein the stream is located between the grounded target substrate and the solutions.

24. (Withdrawn) A method of evaluating a biological response of a cell to a substance, comprising:

applying the substance to the electroprocessed collagen matrix and cells of Claim 3;  
and,  
evaluating the biological response of the cell.

25. (New) A composition comprising electroprocessed collagen comprising a repeated banding pattern, wherein the repeated banding pattern occurs at a spacing of about 65 nm to about 67 nm.

26. (New) The composition of claim 25, wherein the electroprocessed collagen is collagen type I, II, III, IV, V, VI, VII, VIII, IX, X, XI XII, XIII, XIV XV, XVI, XVII, XVIII or XIX, or a combination thereof.

27. (New) The composition of claim 25, wherein the electroprocessed collagen is collagen type I, II or III, or a combination thereof.

28. (New) The composition of claim 25, wherein the repeated banding pattern occurs at a spacing of about 67 nm.

29. (New) The composition of claim 25, wherein the electroprocessed collagen comprises fibers having a diameter of about 40 nanometers to about 5.5 microns.

30. (New) The composition of claim 25, further comprising one or more substances.
31. (New) The composition of claim 25, further comprising additional electroprocessed material comprising one or more natural materials, one or more synthetic materials, or a combination thereof.
32. (New) The composition of claim 25, further comprising one or more polymers.
33. (New) A composition comprising electroprocessed collagen in a matrix, the matrix comprising a pore size in a range of about 0.2 microns to about 5.3 microns.
34. (New) The composition of claim 33, further comprising one or more substances.
35. (New) The composition of claim 34, wherein the one or more substances is cells.
36. (New) The composition of claim 34, wherein the one or more substances is elastin, laminin, integrin or proteoglycan, or a combination thereof.
37. (New) The composition of claim 33, the matrix further comprising additional electroprocessed material comprising one or more natural materials, one or more synthetic materials, or a combination thereof.
38. (New) The composition of claim 33, further comprising one or more polymers.
39. (New) The composition of claim 33, the matrix having a thickness of about 50 microns to about 400 microns.

40. (New) A composition comprising electroprocessed collagen comprising a blend of at least two types of collagen.

41. (New) The composition of claim 40, wherein the at least two types of collagen are selected from the group consisting of collagen type I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII and XIX.

42. (New) The composition of claim 40, wherein the at least two types of collagen are selected from the group consisting of natural collagen, pro-collagen, genetically modified collagen, chemically modified collagen, and a combination thereof.

43. (New) The composition of claim 40, further comprising one or more polymers.

44. (New) The composition of claim 40, comprising a pore size of about 22 microns to about 30 microns.

45. (New) The composition of claim 40, further comprising one or more substances.

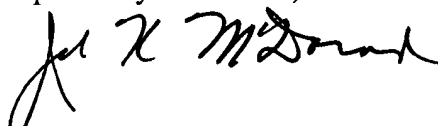
46. (New) The composition of claim 40, further comprising additional electroprocessed material comprising one or more natural materials, one or more synthetic materials, or a combination thereof.

### CONCLUSION

Applicants respectfully assert that this response addresses the concerns raised in the Notice of Non-Compliant Amendment mailed July 22, 2004 and August 11, 2004. The Examiner stated that a Non-Compliant Amendment was submitted to the U.S. Patent Office on July 2, 2004 and July 30, 2004, in reference to the non-final Office Action dated March 10, 2004. Applicants respectfully request entry of the claim amendments submitted herein. If the Examiner believes there are other issues that can be resolved by telephone interview, or that there are any informalities remaining in the application which may be corrected by Examiner's Amendment, a telephone call to the undersigned attorney at (404) 815-6500 is respectfully solicited.

No additional fees are believed due; however the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account number 11-0855.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John K. McDonald". The signature is fluid and cursive, with the first name "John" and last name "McDonald" clearly distinguishable.

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